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Wood Use in Ohio Furniture Factories

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INTRODUCTION

In 1964, the North Central Regional Marketing Committee (NCM-34) initiated a study entitled, Factors Influencing the Use of Wood Materials in the Manufacture of Furniture in the North Central Region.[2] The Department of Agricultural Economics and Rural Sociology of the Ohio Agricultural Research and Development Center contributed to the study by collecting data from Ohio furniture manufacturing firms. It is expected that the regional committee will publish findings in late 1967.

This report for Ohio deals only with data from Ohio firms. The data are analyzed with respect to wood use by these firms and where the firms obtain their supplies.

The Ohio furniture and fixture industry makes a very important contribution to the state's economy (Table 1).

There is an abundance of hardwood timber in Ohio but the Ohio furniture industry purchases much of its raw wood products from outside the state. If growers and primary products producers are to increase sales to Ohio furniture manufacturers, it is important to determine the reasons for purchases, both within and outside the state.

Although the furniture industry is important in the state of Ohio, little research has been conducted with respect to its wood utilization. Practically all prior research has evaluated the use of wood by primary wood manufacturing industries such as lumber, pulpwood, and veneer.

OBJECTIVES

The objectives of this study are:

- To gain an understanding of the hardwood requirements of the Ohio furniture industry.
- To determine the extent to which these firms acquire their wood supply from production of Ohio forests.
- To determine the possibility of increasing the amount of Ohio wood used in the state's furniture manufacturing industry.

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[2]The North Central Region is comprised of Alaska, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.

TABLE 1.—United States and Ohio Furniture Manufacturing Industries, 1963.

	Total Employees	Firms with More Than 20 Employees	Value Added by Manufacture
United States	318,000	3,368	$3,093,000,000
Ohio	17,510	120	181,476,000
Ohio as Percent of U. S.	5.5 %	3.56 %	5.86 %

Source: U. S. Dept. of Commerce, 1963 Census of Manufacture, Summary Series, General Statistics for Industry Groups and Industries, pp. 4, 7.

TABLE 2.—Usable Schedules Obtained from Ohio Furniture Manufacturers.

Employees	SIC 2511	SIC 2512	SIC 2521	SIC 2531
1 - 49 (small)	28	5	2	9
50 - 99 (medium)	4	4	0	2
100 and up (large)	4	6	1	0
Total	36	15	3	11

SAMPLE CHARACTERISTICS

Firms from four classes[3] of manufacturers of furniture and fixtures which account for more than half of the total value of all household and office furniture were included in this study. They were:

1. Household not upholstered furniture (S.I.C. 2511)
2. Household upholstered furniture (S.I.C. 2512)
3. Wooden office furniture (S.I.C. 2521)
4. Public building and related furniture and fixtures (S.I.C. 2531)

Of the 355 Ohio furniture and fixture manufacturers, 237 fall into these four classifications.[4]

A total of 92 firms in these four classifications were selected for interview. This group included a random sample of one-fourth of those firms employing less than 50 persons and all firms employing more than 50 persons in S.I.C. 2511 and 2512. All S.I.C. 2521 and 2531 firms were selected for interview because the number of firms in these classifications is small.

Sixty-five usable schedules were obtained from the sample of 92 firms selected for interview. These are listed by size and class in Table 2.

[3]Classification made by Census Bureau. S.I.C. as used in this publication refers to Standard Industrial Classifications of the Census.

[4]Department of Industrial Development, Census of Ohio Manufacture, 1963. pp. 225-229.

TABLE 3.—Gross Sales by Size of Firms Included in Study, 1964.

Gross Sales	Firms Reporting	Total Gross Sales	Percent of Total Sales	Cumulative Percent
$ 0 - $ 49,999	11	$ 317,500	0.56	0.56
50,000 - 99,999	11	712,000	1.25	1.81
100,000 - 249,999	11	1,479,000	2.58	4.39
250,000 - 499,999	4	1,150,000	2.02	6.41
500,000 - 999,999	2	1,580,000	2.77	9.18
1,000,000 - 1,999,999	8	11,547,000	20.25	29.43
2,000,000 - 2,999,999	1	2,000,000	3.51	32.94
3,000,000 - 3,999,999	3	10,350,000	18.15	51.09
4,000,000 - 4,999,999	2	8,000,000	14.03	65.12
5,000,000 and over	3	19,900,000	34.88	100.00
	56	$57,035,500	100.00	

TABLE 4.—Actual Sales for 1964 and Estimated Sales for 1969.

Size by Employees	Firms	1964 Sales	1969 Sales (Est.)	Expected Change
1 - 49 (small)	29	$ 6,019,500	$ 8,477,000	+ 41%
50 - 99 (medium)	6	6,597,000	14,850,000	+125
100 - and over (large)	9	34,980,000	53,280,000	+ 52
	44	$47,596,500	$76,607,000	+ 61%

The firms from which interviews were obtained varied in volume of sales from a one-man $8,000 operation to one firm with more than 500 employees and gross sales of $9 million. Gross sales by volume class for the 56 firms furnishing volume information are presented in Table 3.

EXPECTED GROWTH OF FIRMS

The 37 firms having gross sales less than $500,000 accounted for 66 percent of the firms furnishing volume information but represented only 9.18 percent of the gross sales. Three large firms accounted for nearly 35 percent of total gross sales of the 56 firms.

Forty-four firms furnished estimates of their probable 1969 production. Data concerning both 1964 sales and expected sales for 1969 for these 44 firms are shown in Table 4.

Firm representatives were asked to cite factors which would be possible deterrents to the growth of their firm during the next 5 years (Table 5). Fifty-five responded, with 33 listing one factor, 19 listing two factors, and 3 listing three factors.

FURNITURE PRODUCED

Consumer demand was, as expected, the most important factor influencing type and design of products manufactured. Only 11 firms reported anything but this factor as important in their decision as to what to manufacture. Of the 11, four said their plant equipment dictated what they produced and three said plant costs were important in such decisions. Two firms' decisions were based on magazine advertising. One said the decision was a personal one and the other that competition was the basis of the company decision.

Table 6 lists the number of firms in the sample which produce specified furniture products.

Seventy-five percent of the small firms[5] producing household not upholstered furniture (S.I.C. 2511) indicated that all of their products were custom made. However, no firm with more than 50 employees in this class made custom furniture.

Three of the five small firms and three of the four medium sized firms producing upholstered furniture (S.I.C. 2512) make all their products on a custom basis. One-third of the large firms in this class reported making all of their products on a custom basis.

The two small firms in S.I.C. 2521 produced all of their furniture

[5]For size classification, refer to Table 4.

TABLE 5.—Factors Which Might Limit Growth of Furniture Manufacturers as Reported by 55 Firms.

Factor	Firms Citing
Inadequate Demand	13
Labor Unavailable	11
Competition	11
Insufficient Capital	9
The Economy	6
High Wage Costs	5
Leaving Business Soon	4
Growth Undesired	4
High Costs, Small Margins	3
Physical Plant	3
Poor Organization	3
Selling Area Limitation	2
Unfavorable Government Attitude	2
Factory Pre-built Furniture	1
Inflation	1
Supply of Domestic Wood	1
Transportation Costs	1

TABLE 6.—Number of Firms Manufacturing Various Products, 1964.

Product	No. of Firms Manufacturing
SIC 2511	
Kitchen cabinets	24
Tables and chairs	10
Sink tops	8
Bathroom vanities	8
Restaurant and bar counters	4
Desks	3
Furniture frames	2
Bookshelves	2
Store fixtures	2
Piano benches	1
Occasional furniture	1
Wardrobes	1
Other*	9
SIC 2512	
Chairs	9
Sofas	8
Living room suites	5
Sectionals	2
Lounges	1
Mattresses	1
SIC 2521	
Restaurant equipment	2
Cabinets	2
Chairs	1
Funeral devotional sets	1
Tables	1
SIC 2531	
Church furniture	5
Chairs, seats	5
Tables	2
School furniture	2
Funeral devotional sets	1
Library furniture	1
Bookcases	1
Bank furniture	1
Kitchen work	1

*Includes school, hospital, motel, bedroom, and children's furniture, wheel chair parts, office counters, wood patterns, and record cabinets.

TABLE 7.—Sources of Wood Raw Materials, Ohio, 1965.

	SIC 2511 36 Firms		SIC 2512 15 Firms		SIC 2521 3 Firms		SIC 2531 11 Firms	
Source	No. of Firms Using	100% from One Source	No. of Firms Using	100% from One Source	No. of Firms Using	100% from One Source	No. of Firms Using	100% from One Source
Own Sawmill			2	1				
Independent Sawmill	9	6	6	3	1	1	7	5
Wholesaler	25	21	9	2	2	2	4	3
Commission Agent	5	4	4	1			2	1
Retailer	2	1						
Frame Manufacturer			2					
Cabinet Shop			1					

on a custom basis. The other firm in S.I.C. 2521 was a large firm which did not produce custom-made furniture.

Nine of the 11 firms in S.I.C. 2531 produced only custom-made furniture. Seven of these firms were small and two were medium sized. Of these seven firms, four were church furniture manufacturers, one produced chairs, and one produced school furniture. Of the two medium sized firms producing only on a custom basis, one produced church furniture and the other laboratory equipment. One firm producing seats indicated they manufactured some on a custom basis. One small firm producing school furniture reported none manufactured on a custom basis.

CHANGES IN PRODUCTS MANUFACTURED

Fourteen firms reported changing the proportion of products manufactured in their plants during the 5 years previous to interview. Four of these firms had made a complete change in type of product manufactured.

Use of wood was not affected by these changes except that one firm reported changing to cheaper grades of wood when product lines were changed and one large firm had shifted from metal to wood in production of dinette sets. The net effect of all shifts was a minor change in wood use by the 65 firms interviewed.

The reasons for shifts in products were reported as largely resulting from consumer demand and competition from other firms. The small firms apparently were more seriously affected by competition than the larger ones.

SOURCE OF HARDWOOD RAW MATERIALS

Hardwood raw materials were obtained from various sources, as shown in Table 7. Fifty-one of the 65 firms used one source only. While volume purchased was not determined directly, it was possible to arrive at the approximate importance of various sources of supply by basing it on volume of output of firms. Such calculation indicated that 39 percent was obtained from wholesalers, 32 percent from independent sawmills, 13 percent from the firm's own sawmill, and 13 percent from commission agents. The remaining 3 percent was purchased from retailers, frame fabricators, and in one case from a cabinet shop.

Fifty-two of the 65 firms, representing 94 percent of total business, purchased hardwood raw material in some form outside Ohio or from supply firms which had purchased hardwood raw material outside Ohio. Reasons given for purchasing outside Ohio or from firms who obtained hardwood raw materials outside Ohio are as follows:

Reasons	Firms: Number	Firms: Percent of Total Business
Quantity not available from other sources	9	27.0
Best price	5	20.7
Established source—no reason to change	12	19.0
Quality	7	11.4
Technical reasons—exact specification not available elsewhere	4	2.5
Various reasons	2	1.9

The remaining 26 firms, representing 17.5 percent of business, either purchased Ohio hardwoods or didn't know whether or not any of it came from outside Ohio.

Percentage of all hardwood used by the 65 firms originating in Ohio or from outside could not be determined. Much of it came from sources where such determinations could not be made from the data obtained from the interviewed furniture manufacturers.

Expenditures by 54 firms, for which figures were available, for hardwood lumber or products made from hardwood lumber totaled approximately $8.5 million. Outlays for hardwood lumber or products from hardwood lumber of species grown in Ohio totaled almost $7 million. Again, there was no way to determine the stumpage value of the lumber. Total value of wood products purchased by the 54 firms was almost $12 million. Of this, 72 percent was from hardwoods and 59 percent was from hardwoods of the species grown in Ohio.

USE OF HARDWOOD

All but four of the 65 firms interviewed used some hardwood products in their production of furniture and fixtures. This ranged from a very small percentage for some firms to 100 percent by others. Thirteen of the firms had been increasing the use of hardwood products as a percentage of total wood products. Of these, nine had changed because of design changes. The other four had, for various reasons, substituted hardwood for other materials.

Twenty-six firms had decreased percentage of hardwood used in their production. Cost was the reason given by 20 of these firms, three had substituted metal, and the other three firms cited design change, lack of good supply, and substitution of softwood veneer as reasons.

Varieties of hardwood used which are indigenous to Ohio were maple, oak, poplar, walnut, cherry, elm, basswood, ash, beech, sycamore, and hackberry. Some shifting was reported in proportion of these hardwoods used but the net shifts were insignificant. Some firms reported that they were forced to use lower grades of some species because of price or lack of availability. Change in consumer demand and change in product manufactured were important causes for the shifting in hardwood use.

The outlook for demand by 1970 for hardwood products by firms in the furniture manufacturing business in Ohio can be assessed only by the predictions made by such firms relative to their expected growth and use of hardwoods in production. Based on these predictions, firms in S.I.C. 2511 classification would increase use of Ohio species of hardwood by 39 percent or well over $1 million worth in the form in which they purchased it. For S.I.C. 2512 firms, the increase would be 50 percent or more than $1.5 million worth of such products. For S.I.C. 2521 firms, the increase would be only about 10 percent or about $50,000. For S.I.C. 2531 firms, the increase would be 25 percent or about $75,000.

All four classes combined indicated a prospective 41 percent increase in demand for Ohio type hardwoods. Firms furnishing data represented slightly more than 30 percent of business value of firms in the state of Ohio in the four S.I.C. classes.

CONCLUSIONS

The prospective increase in demand in Ohio type hardwoods for use in furniture manufacture is based on estimates made by the firms interviewed. Their estimates of future business volume could be in error and their predictions of change in products used in production could be in error because of supply factors, consumer demand, and technological developments. There seems little doubt, however, that demand will be greater for Ohio type hardwoods as a production material. Where added supplies will come from will depend on where supplies of proper quality and quantity are available.

Determination of where to purchase hardwood raw materials by most of the larger firms is based on a reliable supply of the quality and quantity needed. Most of these firms purchasing outside Ohio said supplies of quality and quantity needed were not available in Ohio. To take advantage of demand by these firms, it would be necessary for the establishment of such sources in Ohio. Whether or not this would be worthwhile to Ohio producers would be determined by the added income made possible by sale to such manufacturing firms as well as by the potential supply in Ohio of the type of wood needed. Further study is needed to determine such factors.

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Southern Branch, Ripley, Brown County: 275 acres

Vegetable Crops Branch, Marietta, Washington County: 20 acres

Western Branch, South Charleston, Clark County: 428 acres